[JOINT COMMITTEE PRINT]

DESCRIPTION OF PRESENT LAW AND ISSUES RELATING TO THE RESEARCH AND EXPERIMENTATION TAX CREDIT

SCHEDULED FOR HEARINGS

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT

OF THE

COMMITTEE ON WAYS AND MEANS

ON AUGUST 2 AND 3, 1984

PREPARED BY THE STAFF

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INTRODUCTION

The Subcommittee on Oversight of the House Committee on Ways and Means has scheduled public hearings on August 2 and 3, 1984, on the Federal income tax credit for certain incremental research expenditures. The hearings are being conducted as part of the Oversight Subcommittee's continuing review of current Internal Revenue Code provisions.

In its press release of June 4, 1984, the Subcommittee listed the following issues to be addressed at the hearings: "(1) whether the tax credit provisions should be allowed to sunset, should be extended, or should be made permanent; (2) whether the credit operates to stimulate additional research expenditures, or simply rewards increased research expenditures which would have been made in the absence of a credit; (3) the types of research expenditures and industry activities that have generated use of the tax credit; (4) whether the categories of qualifying research expenditures should be broadened or narrowed; (5) whether taxpayers and the Internal Revenue Service have been able to accurately distinguish qualifying research expenditures from nonqualifying research-related expenditures, such as indirect, overhead, or administrative wage expenditures, and from nonresearch expenditures, such as costs of market research, quality control, or production; (6) whether the base period computation rules are appropriate and have a positive impact on increasing research and experimental expenditures; (7) whether both a credit and tax deduction should be available for the same research expenditures; (8) the impact of the provisions on federal revenues; (9) the impact of the provisions on industry spending and allocation of research expenditure budgets; (10) whether present law rules on the availability of the use of the credit have been effective to accomplish Congressional intent; and (11) in the event the credit is continued, whether any statutory or administrative changes should be made."

The Subcommittee plans to receive testimony from the Department of the Treasury, the Congressional Budget Office, the National Science Foundation, tax and economic experts, interested industry groups, and other invited and public witnesses. In addition, the General Accounting Office will present the results of a study requested by the Subcommittee regarding the impact of the tax credit on research activities under present law.

This pamphlet, prepared in connection with the hearings, contains a description of the present-law credit provisions and a brief discussion of the issues listed in the Subcommittee's press release.

I. PRESENT LAW

A. Current Deduction for Certain Research Expenditures

General rule

As a general rule, business expenditures to develop or create an asset which has a useful life that extends beyond the taxable year, such as expenditures to develop a new product or improve a production process, must be capitalized. However, Code section 174 permits a taxpayer to elect to deduct currently the amount of "research or experimental expenditures" incurred in connection with the taxpayer's trade or business. For example, a taxpayer may elect to deduct currently the costs of wages paid for services performed in qualifying research activities, and of supplies and materials used in such activities, even though these research costs otherwise would have to be capitalized.

The section 174 election does not apply to expenditures for the acquisition or improvement of depreciable property, or land, to be used in connection with research.[1] Thus, for example, the total cost of a research building or of equipment used for research cannot be currently deducted under section 174 in the year of acquisition. However, the amount of depreciation (cost recovery) allowance for a year with respect to depreciable property used for research may be deducted in that year under the election. Under ACRS, machinery and equipment used in connection with research and experimentation are classified as three-year recovery property and are eligible for a six-percent regular investment tax credit.

Qualifying expenditures

The Code does not specifically define "research or experimental expenditures" eligible for the section 174 deduction election, except to exclude certain costs. Treasury regulations (sec. 1.174-2(a)) define this term to mean "research and development costs in the experimental or laboratory sense." This includes generally "all such costs incident to the development of an experimental or pilot model, a plant process, a product, a formula, an invention, or similar property," and also the costs of obtaining a patent on such property.

The present regulations provide that qualifying research expenditures do not include expenditures "such as those for the ordinary testing or inspection of materials or products for quality control or those for efficiency surveys, management studies, consumer surveys, advertising, or promotions." Also, the section 174 election

[1] Also, the statute excludes expenditures to ascertain the existence, location, extent, or quality of mineral deposits, including oil and gas, from eligibility for section 174 elections (sec. 174(d)). However, expenses of developing new and innovative methods of extracting minerals from the ground may be eligible for sec. 174 elections (Rev. Rul. 74-67, 1974-1 C.B. 63). Also, certain expenses for development of a mine or other natural deposit (other than an oil or gas well) may be deductible under sec. 616.

cannot be applied to costs of acquiring another person's patent, model, production, or process or to research expenditures incurred in connection with literary, historical, or similar projects (Reg. sec. 1.174-2(a)).

B. Credit for Increasing Certain Research Expenditures

Overview

General rule.—An income tax credit is allowed for certain qualified research expenditures paid or incurred by a taxpayer during the taxable year in carrying on a trade or business of the taxpayer (Code sec. 44F, enacted in the Economic Recovery Tax Act of 1981).[2] The credit applies only to the extent that the taxpayer's qualified research expenditures for the taxable year exceed the average amount of the taxpayer's yearly qualified research expenditures in the specified base period (generally, the preceding three taxable years). The rate of the credit is 25 percent of the incremental research expenditure amount.

Under present law, the credit applies to qualified research expenditures paid or incurred after June 30, 1981 and before January 1, 1986.

Qualifying expenditures.—For purposes of the incremental credit, the definition of research is the same as that used for purposes of the special deduction rules under section 174, but subject to certain exclusions. A taxpayer's research expenditures eligible for the credit consist of (1) "in-house" expenditures by the taxpayer for research wages and supplies used in research, plus certain amounts paid for research use of laboratory equipment, computers, or other personal property; (2) 65 percent of amounts paid by the taxpayer for contract research conducted on the taxpayer's behalf, and (3) if the taxpayer is a corporation, 65 percent of the taxpayer's payments (including grants or contributions) pursuant to a written research agreement for basic research to be performed by universities or certain scientific research organizations.

Relation to deduction.—The credit is available for incremental qualified research expenditures for the taxable year whether or not the taxpayer has elected under section 174 to deduct currently research expenditures. The amount of any section 174 deduction to which the taxpayer is entitled is not reduced by the amount of any credit allowed for qualified research expenditures.

Trade or business limitations

Under present law, the credit is available only for research expenditures paid or incurred in carrying on a trade or business of the taxpayer. With one exception, the trade or business test for purposes of the credit is the same as for purposes of the business deduction provisions of section 162. Thus, for example, the credit generally is not available to a limited partnership (or to any partners in such partnership, including a general partner which is an operating company) for partnership expenditures for "outside" or contract research intended to be transferred by the partnership to another (such as to the general partner) in return for license or

[2] Section 471 of the Deficit Reduction Act of 1984 (P.L. 98-369) renumbers the credit provision as Code section 30, effective for taxable years beginning after 1983.

royalty payments. Under the trade or business test, research expenditures of a taxpayer are eligible for the credit only if paid or incurred in a particular trade or business already being carried on by the taxpayer.

As the only exception to the rule that the trade or business test for purposes of the credit is the same as for purposes of section 162, the Treasury Department is to issue regulations, for credit purposes only, which are to allow the credit in the case of a research joint venture between taxpayers which both (1) themselves satisfy the carrying on test (e.g., the research must be in a particular trade or business already being carried on by the taxpayer) and also (2) themselves are entitled to the research results.

Furthermore, in cases where an organization conducting research is deemed to be carrying on a trade or business under these rules (so that the credit is available for incremental research expenditures), the Congress determined that individual taxpayers with interests in the organization should not be able to utilize passthroughs of the credit to offset tax on income from unrelated sources. Thus, individuals (including partners and S corporation shareholders) to whom the credit is properly allocable may use the credit in a particular year only to offset the amount of tax attributable to that portion of the individual's taxable income which is applicable or apportionable to such interest. (A 15-year carryover is allowed for any unused credit.) Also, allocations of the credit among partners, etc., must be in accordance with rules prescribed in Treasury regulations.

Explanation of incremental credit

Definition of qualified research

Subject to certain exclusions, the credit provision adopts the definition of research as used in section 174. Thus, under present law, the term "qualified research" for purposes of section 44F has the same meaning, subject to the specified exclusions, as has the term "research or experimental" under section 174 (described above).

The credit is not available for expenditures such as the costs of routine or ordinary testing or inspection of materials or products for quality control; of efficiency surveys or management studies; of consumer surveys (including market research), advertising, or promotions (including market testing or development activities); or of routine data collection. Also, costs incurred in connection with routine, periodic, or cosmetic alterations or improvements (such as seasonal design or style changes) to existing products, to production lines, or to other ongoing operations, or in connection with routine design of tools, jigs, molds, and dies, do not qualify as research expenditures under the credit.[3]

Exclusions

There are three express exclusions from the definition of qualified research for purposes of the credit.

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[3] The credit is not available for such expenditures as the costs of construction of copies of prototypes after construction and testing of the original model(s) have been completed; of preproduction planning and trial production runs; of engineering follow-through or troubleshooting during production; or of adaptation of an existing capability to a particular requirement or customer's need as part of a continuing commercial activity.

First, expenditures for research which is conducted outside the United States do not enter into the credit computation.

Second, the credit is not available for research in the social sciences or humanities (including the arts), such as research on psychological or sociological topics or management feasibility studies.

Third, the credit is not available for research to the extent funded by any grant, contract, or otherwise by another person (or any governmental entity).

In-house research expenditures

Employee wages qualify for the credit to the extent paid for engaging in the actual conduct of research, in the immediate supervision of the actual conduct of qualified research, or in the direct support of the actual conduct (or of the immediate supervision of the actual conduct) of qualified research. No amount of wages paid for overhead or for general and administrative services, or of indirect research wages, qualifies for the credit.

In addition, amounts paid for supplies used in the conduct of qualified research are eligible for the credit. The term supplies means any tangible property other than property of a character subject to the allowance for depreciation (cost recovery), land, or improvements to land. Neither the cost of acquisition of, nor the amount of depreciation (cost recovery) allowances with respect to, property which is of a character subject to the depreciation (cost recovery) allowance is eligible for the credit under present law, whether or not amounts of depreciation are deductible during the year under section 174.

Finally, amounts paid for the right to use personal property in the conduct of qualified research generally qualify for the credit, if such amounts are paid to a person other than the taxpayer or certain related persons.

Contract research expenditures

In addition to the categories of in-house research expenditures, 65 percent of amounts paid by the taxpayer for qualified research performed on behalf of the taxpayer enters into the incremental credit computation. The research firm, university, or other person which conducts the research on behalf of the taxpayer cannot claim any amount of the credit for its expenditures in performing the contract.

If any contract research amount paid or incurred during a taxable year is attributable to qualified research to be conducted after the close of that taxable year, that amount is treated, pursuant to a prepayment limitation, as paid or incurred during the period during which the qualified research is actually conducted.[4]

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[4] For example, if on December 1, 1983, a calendar-year taxpayer paid $100,000 to a research firm pursuant to a contract for qualified research to be performed on behalf of the taxpayer, and if the research firm conducts all of such qualified research during 1984, no amount is eligible for a credit for 1983, and $65,000 (65 percent of the total contract price) is treated as research expenditures of the taxpayer paid during 1984. Amounts which are treated as contract research expenditures during a particular taxable year pursuant to the prepayment limitation rule, and hence which count as expenditures for such year entering into the credit computation for such taxable year, also are treated as having been made during that same taxable year for purposes of determining average yearly base period expenditures in later year credit computations. Thus, in the example given above, $65,000 enters into the taxpayer's 1984 credit base.

Expenditures for university basic research

A special rule treats as qualified research expenditures 65 percent of certain corporate payments (including grants or charitable contributions) for basic research to be performed at a college, university, or other qualified organization pursuant to a written research agreement. Under this rule, a corporate taxpayer takes into account, for purposes of computing the incremental credit, 65 percent of qualifying basic research payments, subject to the contract research prepayment limitation.

Computation of allowable credit

General rule

As a general rule, the credit applies to the amount of qualified research expenditures for the current taxable year which exceeds the average of the yearly qualified research expenditures in the preceding three taxable years.[5] The base period amount is not adjusted for inflation.

New businesses

For a base period year during which it was not in existence, a new business is treated as having research expenditures of zero in such year for purposes of computing average annual research expenditures during the base period. However, the taxpayer may be deemed to have expenditures in such a base period year pursuant to the 50-percent limitation rule (described below).

50-percent limitation rule

Base period research expenditures are treated as at least equal to 50 percent of qualified research expenditures for the current year. This 50-percent limitation applies both in the case of existing businesses and in the case of newly organized businesses.[6]

Aggregation rules

To ensure that the credit will be allowed only for actual increases in research expenditures, special rules apply under which research expenditures of the taxpayer are aggregated with research expenditures of certain related persons for purposes of computing any allowable credit. These rules are intended to prevent artificial increases in research expenditures by shifting expenditures among commonly controlled or otherwise related persons.

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[5] Because the credit became effective for qualified research expenditures paid or incurred after June 30, 1981, a special rule was provided for computing base period expenditures for the taxpayer's taxable year which included July 1, 1981. A similar rule is to apply in the case of a taxpayer's first taxable year including December 31, 1985 (when the credit is scheduled to terminate).

[6] For example, assume that a calendar-year taxpayer is organized on January 1, 1983; makes qualified research expenditures of $100,000 for 1983; and makes qualified research expenditures of $260,000 for 1984. The new-business rule provides that the taxpayer is deemed to have base period expenditures of zero for pre-1983 years. Without regard to the 50-percent limitation, the taxpayer's base period expenditures for purposes of determining any credit for 1984 would be the average of its expenditures for 1981 (deemed to be zero), 1982 (deemed to be zero), and 1983 ($100,000), or $33,333. However, by virtue of the 50-percent limitation, the taxpayer's average base period expenditures are deemed to be no less than 50 percent of its current year expenditures ($260,000), or $130,000. Accordingly, the amount of 1984 qualified research expenditures to which the credit applies is limited to $130,000, and the amount of the taxpayer's credit for 1984 is $32,500.

Changes in business ownership

Special rules apply for computing the credit where a business changes hands, under which qualified research expenditures for periods prior to the change of ownership generally are treated as transferred with the trade or business which gave rise to those expenditures. These rules are intended to facilitate an accurate computation of base period expenditures and the credit by attributing research expenditures to the appropriate taxpayer.

Limitations and carryover

In the case of an individual who owns an interest in an unincorporated trade or business, who is a beneficiary of a trust or estate, who is a partner in a partnership, or who is a shareholder in an S corporation, the amount of credit that can be used in a particular year also cannot exceed an amount (separately computed with respect to the person's interest in the trade or business or entity) equal to the amount of tax attributable to that portion of the person's taxable income which is allocable or apportionable to such interest.[7]

If the amount of credit otherwise allowable exceeds the applicable limitation, the excess amount of credit can be carried back three years (including carrybacks to years before enactment of the credit) and carried forward 15 years, beginning with the earliest year.

Effective date

Under present law, the incremental credit applies to qualified research expenditures paid or incurred after June 30, 1981 and before January 1, 1986.

Revenue effect

The incremental credit provision of present law is estimated to reduce fiscal year budget receipts by $1,420 million in 1984, $1,515 million in 1985, $1,015 million in 1986, $485 million in 1987, $261 million in 1988, and $129 million in 1989.

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[7] For example, if in a particular year an individual partner derives no taxable income from a partnership which had made incremental qualified research expenditures, the individual may not use in that year any tax credit resulting from incremental qualified research expenditures of such partnership which otherwise would have been properly allowable to the partner (e.g., where the partnership had paid such research expenditures in carrying on a trade or business of the partnership and where any credit allowable to the partnership with respect to such expenditures had been properly allocated among the partners pursuant to Treasury regulations). If in this example the partner had derived taxable income allocable or apportionable to his or her partnership interest, then the amount of credit which may be used in that year by the individual partner may not exceed the lesser of the general limitation amount or the separately computed additional limitation amount applicable to individuals.

II. ISSUES

In general

The Subcommittee stated, in the announcement of the hearings, that it wanted to receive information from witnesses on 11 issues which relate to (a) what have been the effects of the credit on the extent and types of research activity, and (b) whether the credit should be extended and, if so, what modifications should be made to present law provisions. The 11 issues are:

(1) whether the tax credit provisions should be allowed to sunset, should be extended, or should be made permanent;

(2) whether the credit operates to stimulate additional research expenditures, or simply rewards increased research expenditures which would have been made in the absence of a credit;

(3) the types of research expenditures and industry activities that have generated use of the tax credit;

(4) whether the categories of qualifying research expenditures should be broadened or narrowed;

(5) whether taxpayers and the Internal Revenue Service have been able to accurately distinguish qualifying research expenditures from nonqualifying research-related expenditures, such as indirect, overhead, or administrative wage expenditures, and from nonresearch expenditures, such as costs of market research, quality control, or production;

(6) whether the base period computation rules are appropriate and have a positive impact on increasing research and experimental expenditures;

(7) whether both a credit and tax deduction should be available for the same research expenditures;

(8) the impact of the provisions on federal revenues;

(9) the impact of the provisions on industry spending and allocation of research expenditure budgets;

(10) whether present law rules on the availability of the use of the credit have been effective to accomplish Congressional intent; and

(11) in the event the credit is continued, whether any statutory or administrative changes should be made.

Five of the issues are to be addressed specifically by Federal agencies which have been conducting statistical investigations into the issues that can be answered only by such studies. Thus, the Treasury Department, the Congressional Budget Office, and the General Accounting Office are expected to respond to issues 2, 3, 5, 8, and 9: (2) whether the credit stimulates research expenditure increases in addition to those planned for other reasons; (3) types of industrial research expenditures that have been generated by use of the credit; (5) whether taxpayers and the IRS have been able to

distinguish accurately qualifying research expenditures from nonqualifying expenditures and from nonresearch expenditures; (8) revenue effects of the credit, i.e., actual revenue loss from enactment to date; (9) impact of the provisions on industry spending and allocation of research expenditure budgets.

Issues (4) and (6), which relate to the definition of qualifying research expenditures and the effects of the computation rules on increasing research expenditures, both are discussed below (see "Background for consideration of issues").

Issues (1), (7), and (11) relate to suggestions for possible legislative action: (1) whether the credit should be extended beyond the present-law expiration date (either for a limited period or indefinitely), or allowed to terminate; (11) whether, if the credit is extended, modifications should be made to the credit provisions for policy, technical, or administrative reasons; and (7) whether the section 174 deduction for research expenditures should be reduced by the amount of the credit.

Background for consideration of issues

Incremental credit

The research credit was designed to provide a tax incentive to taxpayers that increase the amounts of spending for research to levels higher than the level of a 3-year moving average base period. As a result of this characteristic, a taxpayer may be allowed the credit each year only if its qualified research expenditures increase annually above the moving base period average.

In the event the taxpayer has increased its research spending for several years to a substantially higher level and then simply maintains spending at the higher amount, the base period average will equal the new spending 2 years after the higher level first is reached, and no tax credits will be earned while keeping at the higher level. Once a base period consists of 3 full years of research spending, the credit generally is measured by the increment to qualified research expenditures over an average centered 2 years before, hence a 2-year lag.

A taxpayer may have research expenditures that fluctuate for business cycle or other reasons. To the extent that research spending rises and falls consistently with cyclical fluctuations, higher spending intended to make up for the cyclically induced decline will qualify for the credit, even though the expenditures through complete business cycles average at a stable long-run level of research. In this situation, the moving base period average excerbates the effects of the cycle because the credit is not allowable when a recession-induced decline in research spending falls below the base period average. It is conceivable also that a taxpayer which is planning a substantial increase in research activities could reduce current spending in order to reduce the base period average and thereby qualify for a larger tax credit.

The 50-percent limitation on the amount of spending eligible for the credit—i.e., the base period average may not be less than 50 percent of current spending—was designed primarily to restrict the amount of credit allowable to taxpayers with zero research spending during one or more base period years. In most cases, such tax-

payers are new businesses. The limitation only would reduce the credit to a taxpayer that more than doubles current year research spending above the base period average.

As with other tax credits, the nonrefundable provision limits the amount of credit allowed for taxpayers with no tax liability, allowable credits that exceed tax liability before the credit, and insufficient tax liability for carryback purposes. Generous carryforwards of unused tax credits do not compensate for the lower present value of future credits compared with currently usable or refundable credits.

Suggestions for modifications in the credit mechanism (if retained) have included making the credit permanent, eliminating the 50-percent floor, making the credit refundable so that it is neutral among taxpayers in differing economic circumstances, and modifying the base period moving average in a number of ways. The latter suggestions include measuring changes from the 1981-83 base period relative to a broader base of industrial experience than that of any particular taxpayer, keeping the base period constant, and having a constant base period increased by a measure of inflation.

Definition of research

As defined for nontax purposes, research may encompass a broad spectrum of activities that ranges from the search for new knowledge to the development of new products and technologies that meet specific commercial needs. The boundaries between different types of research are not clear, and definitions have been developed in terms of the purpose of the activities. Thus, research and related activities have been distinguished on the basis of advancing fundamental scientific knowledge (basic research), practical or commercial application (applied research), or generation of new business products and processes (development).

The National Science Foundation has developed the following definitions of the three research-related areas of activity for its own statistical collection purposes.

Basic research has as its objective achieving a fuller knowledge or understanding of the subject under study, rather than practical application of the information. In this sense, basic research advances scientific knowledge without having specific commercial objectives.

Applied research is directed toward gaining knowledge or understanding necessary for determining the means by which a recognized and specific need may be met. This kind of research involves efforts directed to the discovery of new scientific knowledge that will have specific commercial application to products or processes.

Development is defined as the systematic use of the knowledge or understanding gained from research in the production of useful materials, devices, systems, or methods, including design and development of prototypes and processes.

Available data suggests that some claims for the credit have been made for expenditures that are more closely related to production than research. One attempt to deal with this issue is reflected in certain provisions related to the definition of research, for purposes of the credit, in the Senate-passed version of the Defi-

cit Reduction Act of 1984 (which were not adopted by the conference), which sought to restrict the credit to certain activities that occur before the organization of the production process.

Under the Senate amendments to the research credit, qualified research would have been defined as either (1) planned or systematic investigation undertaken to discover information that may be useful in developing a technologically new or improved business component of the taxpayer, or (2) application of the results obtained from such research activity, or other knowledge, to develop a technologically new or improved business component of the taxpayer. (This definition of research would have included design, construction, and testing of models or prototypes, or an experimental pilot plant.) The limitations on qualified research would have included requirements that the taxpayer's new business component contain or embody new or improved technological characteristics and that substantially all of the activities undertaken in developing or improving the business component constitute elements of a process of qualified experimentation.

Research in space

The Administration has announced recently that it is formulating legislative proposals to make commercial activities in space by U.S. taxpayers eligible for the tax and economic incentives generally available to earth-bound domestic business taxpayers. Most directly, an amendment would be needed to the present-law provision limiting the credit to research which is conducted in the United States. Such an amendment would have to include a definition that relates the activities conducted in space, the physical bounds of the United States, and the U.S. taxpayer.

Revenue considerations

Revenue loss typically is a major consideration in the legislative construction of a new tax incentive. As a result, design of a tax credit involves evaluation of how much revenue loss can be sustained with a new tax credit, and the amount of loss that may be contributed by each major component of the credit. For this credit, the important revenue components have been the credit rate, the definition of qualified research, whether the credit would be incremental, and, if so, how to define the base period appropriately.

The issue of whether to make the credit incremental over a base period also relates to whether the credit should be available for previously attained levels of research or be used to stimulate greater efforts in the area. Clearly, if the credit is not incremental, there is a larger base to which the credit would be applied; but with a narrower base, as with an incremental credit, the credit rate can be higher for any given level of acceptable revenue loss. The same kinds of considerations also must be assessed with respect to taxpayers that would have years with no qualified research expenditures in the base period (therefore the 50-percent floor), whether the base period should be fixed or moving, and whether unused credits should be refundable or carried over (as are other business incentive tax credits).

Financing sources for and performing of research and development

Tables 1, 2, and 3 illustrate for the United States who provided funds for and who performed the 3 general types of research and development in 1982. The data, which were collected by the National Science Foundation, are described in broad categories of providers and performers (Federal Government, industry, and nonprofit institutions) and types of research (basic and applied research and development).

Table 1 shows that $77.3 billion in such activities was financed and performed in 1982. Industry financed half ($38.5 billion) of the activities, and the Federal Government financed 47 percent ($36 billion). Nonprofit institutions financed the remainder; these institutions include colleges, universities, and State and local governments.

Table 1.—Sources of Funds and Performers of Research and Development

[1982 estimates, in millions of dollars]

Sources of funds	Research performers			
	Federal Government	Industry	Nonprofit institutions [1]	Total
Federal Government	10,000	17,800	8,325	36,125
Industry		37,900	600	38,500
Nonprofit institutions [1]			2,660	2,660
Total	10,000	55,700	11,585	77,285

[1] Includes (1) universities, colleges, and agricultural experiment stations; (2) federally funded research and development centers (FFRDCs) administered by individual universities and colleges and by university consortia; and (3) other nonprofit institutions, including State and local governments.

FFRDCs are organizations exclusively or substantially financed by the Federal Government to meet a particular requirement or to provide major facilities for research and training purposes. Their expenditures are administered by research performers in industry and nonprofit institutions, are included in the totals of the respective sectors, and account for less than 5 and 15 percent, respectively, of those sector totals.

Source: National Science Foundation, "National Patterns of Science and Technology Resources," 1982, pp. 10–11.

The Federal Government used $10.0 billion of its own funds to finance research and development performed by its own personnel in its own labs. The remaining $26.1 billion—almost three-fourths of the Federal Government total—went to industrial and nonprofit research and development performers, divided about two-thirds (to industry) and one-third. Industry spent $55.7 billion in performing research, using $37.9 billion of its own research and development funds and $17.8 billion of Federal Government money. These data do not indicate what portion of federally financed industrial research and development was used for federal projects. Nonprofits financed $2.7 billion in research and development which was used for research entirely within its own sector, but the Federal Government financed $8.3 billion of the $11.6 billion in research and development performed by nonprofits.

In table 2, there is a distribution showing what types of research and development were performed with funds provided by the Federal Government, industry, and nonprofit institutions. Most of the Federal Government's funds financed development, and the smallest share of its funds was used for basic research. However, that amount, $6.2 billion, financed two-thirds of the basic research per-

formed in the United States. As table 3 indicates, $6.3 billion of the $9.3 billion used for basic research is performed in the nonprofit sector.

Table 2.—Sources of Funds and Types of Research Performed

[1982 estimates, in millions of dollars]

Sources of funds	Types of research performed			
	Basic research	Applied research	Development	Total, R&D
Federal Government	6,220	7,245	22,660	36,125
Industry	1,615	8,395	28,490	38,500
Nonprofit institutions [1]	1,495	915	250	2,660
Total	9,330	16,555	51,400	77,285

See table 1 for note and source.

Development used two-thirds of the research and development funds and was financed almost entirely by the Federal Government and by industry (table 2). Industry performed substantially all of the development activity and a major share of applied research. Although the Federal Government financed two-thirds of basic research, it used more than half its funds for development.

As table 3 shows, industry is the major research performer, spending $55.7 billion, or 72 percent of research and development funds; nonprofit institutions and the Federal Government performed 15 and 13 percent, respectively, of the total.

Table 3.—Performers of Types of Research and Development

[1982 estimates, in millions of dollars]

Research perfomers	Types of research performed			
	Basic research	Applied research	Development	Total, R&D
Federal Government	1,425	2,775	5,800	10,000
Industry	1,650	10,300	43,750	55,700
Nonprofit institutions [1]	6,255	3,480	1,850	11,585
Total	9,330	16,555	51,400	77,285

See table 1 for note and source.